

D2
4. (Amended) The AAV Rep78 mutant of claim 2, wherein said AAV Rep78 modified protein having no DNA binding or weak DNA binding to said DNA sequence obtained from at least one of a papillomavirus, an AAV, an oncogene or a HIV, and wherein the no DNA binding or weak DNA binding results in the generation of higher levels of AAV DNA replication and virion numbers compared to the corresponding wild type AAV Rep78 protein.

5. (Amended) The AAV Rep78 mutant of claim 2, wherein said AAV Rep78 modified protein having enhanced DNA binding to said DNA sequence obtained from at least one of a papillomavirus or an oncogene, and wherein the enhanced DNA binding results in enhanced inhibition of at least one of a papillomavirus or an oncoprotein compared to the corresponding wild type AAV Rep78 protein.

D3
7. (Amended) The AAV Rep78 mutant of claim 6, wherein said AAV Rep78 modified protein is a truncated AAV Rep78 protein that binds to said DNA sequence, and wherein said binding results in enhanced inhibition of a papillomavirus or an oncogene compared to the corresponding wild-type AAV Rep78 protein.

D4
13. (Amended) A fusion protein comprising an AAV Rep78 modified protein that binds to at least one DNA sequence obtained from one or more of a papillomavirus, an AAV, an oncogene or a HIV differently as compared to the binding of the corresponding wild-type AAV Rep78 protein as set forth in SEQ ID NO:6, and wherein said different DNA binding is selected from the group consisting of no DNA binding, weak DNA binding and enhanced DNA binding as compared to the binding of said wild-type AAV Rep78 protein.

D5
19. (Amended) A pharmaceutical composition comprising at least one AAV Rep78 mutant according to claim 2 in admixture with a pharmaceutically acceptable carrier.

20. (Amended) A method of treating papillomavirus associated diseases or cancer comprising administering a pharmaceutical composition comprising at least one adeno-associated virus (AAV) Rep78 mutant in admixture with a pharmaceutically acceptable carrier to a patient afflicted with a papillomavirus associated disease or cancer, wherein said mutant comprises an AAV Rep78 modified protein that binds to at least one DNA sequence obtained from a papillomavirus, wherein said DNA binding is enhanced DNA binding as

compared to the binding of the corresponding wild-type AAV Rep78 protein as set forth in SEQ ID NO:6 to the DNA sequence.

D6
46. (Amended) The AAV Rep78 mutant of claim 2, wherein said no DNA binding or weak DNA binding results in the generation of higher levels of AAV DNA replication and/or AAV virion production compared to the corresponding wild type AAV Rep78 protein.

REMARKS

Claims 2, 4-20 and 46 are pending. Claims 2, 4, 5, 7, 13, 19, 20 and 46 have amended to more clearly define the present invention, and should not be construed as the surrender of any subject matter. Applicants reserve the right to file one or more continuing applications on any canceled subject matter. The amended claims have support in the original claims and specification as filed.

Rejections under 35 U.S.C. § 112, second paragraph

Claims 4, 5, 7-10, and 12-18

Claims 4, 5, 7, 13 and 46 are rejected as being indefinite for the recitation of specific language.

The examiner maintains that claim 7 is indefinite in the recitation of “minimum number of amino acids” of the wild-type AAV Rep78 protein that are necessary to bind to the desired DNA sequences. Applicant points out that the wild-type AAV Rep78 protein has been identified by a specific sequence in claim 2 which provides a defined sequence, SEQ ID NO:6. As previously argued, the specification provides assays to determine binding of the AAV Rep 78 proteins to DNA sequences. Thus, a person of skill in the art would be able to determine through trial and error experimentation the minimum number and location of amino acids that are necessary to bind to the DNA sequence to obtain enhanced inhibition of papillomavirus or an oncogene without undue experimentation. However, in an effort to expedite prosecution, applicants have amended claim 7 to delete the language objected to by the Examiner and claim 7 now recites that the truncated AAV Rep78 protein “... binds to said DNA sequence.” The truncated AAV Rep78 protein is a portion of SEQ ID NO:6, bind to the DNA sequence which results in enhanced inhibition of a papillomavirus or an